REMARKS/ARGUMENTS

Claims 1, 2, 5-22 and 24-35 are pending in this application. By this Amendment, claims 1, 5-6, 9-10, 18-19, 21, 24, 27-28, 32 and 35 are amended, and claims 3-4 and 23 are canceled without prejudice or disclaimer. Support for the claims can be found throughout the specification, including the original claims, and the drawings. Withdrawal of the rejections in view of the above amendments and the following remarks is respectfully requested.

The Examiner is thanked for the indication that claims 14-17 are allowed.

The Office Action rejects claims 1-13 and 18-35 under 35 U.S.C. §103(a) over U.S. Patent No. 6,445,203 to Yamashita et al. (hereinafter "Yamashita") in view of Tilton et al., U.S. Patent Publication No. 2004/0051545 (hereinafter "Tilton"). Claims 3-4 and 23 are cancelled. The rejection, in so far as it applies to the remaining claims, is respectfully traversed.

Independent claim 1 recites, *inter alia*, a pair of supporting members provided adjacent to the press unit, each of the pair of supporting members having a cooling fluid flow passage formed therein for flow of cooling fluid, and at least one cooling fluid spraying unit extending between the pair of supporting members configured to be in fluid communication with the pair of supporting members so as to spray the cooling fluid supplied through the cooling fluid flow passages toward faces of modular ICs in an oblique direction with respect to a central plane of the at least one cooling fluid spraying unit. Independent claim 21 recites, *inter alia*, a pair of supporting members provided adjacent to the press unit, each of the pair of supporting members

having a cooling fluid flow passage formed therein for flow of cooling fluid, and at least one cooling fluid spraying unit extending between the pair of supporting members and configured to be in fluid communication with each of the pair of supporting members so as to spray the cooling fluid supplied through the cooling fluid flow passages toward faces of modular ICs in an oblique direction with respect to a central plane of the at least one cooling fluid spraying unit. Independent claim 32 recites, *inter alia*, at least one supporting member provided adjacent to the press unit and having a cooling fluid flow passage formed therein for flow of cooling fluid, and at least one cooling fluid spraying unit configured to be supported by the at least one supporting member so as to be interposed between the plurality of push bars of the press unit and configured to spray the cooling fluid supplied through the cooling fluid flow passage toward modular ICs connected to the test sockets of the handler. Independent claim 35 recites, *inter alia*, spraying cooling fluid through a plurality of apertures formed in at least one cooling fluid spraying unit, wherein the plurality of apertures are oriented in a direction which is oblique with respect to a central plane of the at least one cooling fluid spraying unit. Yamashita neither discloses nor suggests at least such features, or the claimed combinations of features.

Yamashita discloses a device testing apparatus 10 including a handler 1 which conveys a chip 2 to an appropriate socket 50 for testing. Once the chip 2 is positioned atop its socket 50, the chip is pushed down onto pins 51 by a rod 31 extending from a pusher 30. The pusher 30 is moved in the vertical direction through the action of an adapter 62, match plate 60, drive plate

72 and Z-drive 70 (see column 11, lines 40-52 and Figure 1 of Yamashita). A fan 92 blows heated or cooled air generated by a heat exchanger 94 through the chamber 102 following the arrow shown in Figure 1 of Yamashita based on a temperature measured by a first temperature sensor 82.

A second temperature sensor 114 is positioned at the end of the rod 31 which contacts the chip 2 to measure the temperature of the chip 2 and its surrounding area. If the temperature of the chip 2 falls outside an acceptable range, an air distributor 121, a temperature control means 124, and a ventilation control means 126 operate to provide heated or cooled air into a ventilation tube 122. From the ventilation tube 122, the air flows into the air distributor 121 and through a series of ventilation holes 118, 116, and 110 formed in the air distributor 121 and pushing part 74, adapter 62, and rod 31, respectively, and directly onto the face of the chip 2.

It appears the Examiner has drawn a comparison between the drive plate 72 disclosed by Yamashita and the press unit recited in independent claims 1, 21, 32 and 35, between the ventilation tubes 122 disclosed by Yamashita and the recited supporting members, and between the distributor 121 disclosed by Yamashita and the recited at least one cooling fluid spraying unit. However, if the ventilation tubes 122 and distributor 121 are to be compared to the pair of supporting members and at least one cooling fluid spraying unit, respectively, recited in independent claims 1 and 21, then it is respectfully submitted that Yamashita neither discloses at least one cooling fluid spraying unit as recited in independent claims 1 and 21.

That is, Yamashita shows in Figure 1 two ventilation tubes 122 each extending downward from the temperature control means 124 into separate air distributors 121 and ventilation holes 118, 116 and 110. However, Yamashita clearly discloses that each ventilation tube 122 forms its own, separate flow path with its respective air distributor 121 and ventilation holes 118, 116 and 110 onto separate chips 2, which do not extend between the two ventilation tubes 122 which may form a pair. Thus, Yamashita neither discloses nor suggests that the air distributor 121 and/or ventilation holes 118, 116, 110 extend between the two ventilation tubes 122 (compared in the Office Action to the recited pair of supporting members), as does the at least one spraying unit recited in independent claims 1 and 21.

Further, if the drive plate 72 disclosed by Yamashita is to be compared to the recited press unit and the push portion 74 and pusher 30 disclosed by Yamashita are to be compared to the recited plurality of push bars, then Yamashita neither discloses nor suggests at least one cooling fluid spraying unit as recited in independent claim 32. That is, the air distributor 121 is positioned atop the drive plate 72 (compared in the Office Action to the recited press unit), which is positioned atop the push portion 74, which is positioned atop the pusher 30 (compared in the Office Action to the recited plurality of push bars). Yamashita neither discloses nor suggests that the air distributor 121 (compared in the Office Action to the recited at least one spraying unit) is interposed between the push portion 74 and pusher 30 (compared in the Office

Action to the recited plurality of push bars), as is the at least one spraying unit recited in independent claim 32.

Still further, Tilton is merely cited as allegedly teaching spraying cooling fluid in a direction which is oblique with respect to a central plane of the at least one spraying unit, and thus fails to overcome the deficiencies of Yamashita as discussed above with respect to independent claims 1, 21 and 32.

Additionally, Tilton discloses a thermal management system 10 for burn-in of semiconductor devices 18, in which a plurality of spray units 40 dispense cooling fluid onto surfaces of the semiconductors 18 during burn-in to maintain a constant surface temperature. Each spray unit 40 includes a second portion 54 movably coupled to a first portion 50, with orifices 56 and 52, respectively, formed in each. Cone angles associated with the flow of fluid through the orifices 52, 56 may be adjusted as necessary by adjusting a pressure and/or flow of the fluid provided to the spray unit 40. However, the orifices 52, 56 are coplanar with the first and second portions 50, 54, respectively, in which they are formed, and each substantially parallel with the semiconductor 18 to which they are to spray. Tilton neither discloses nor suggests that the orifices 52, 56 are oriented in a direction which is oblique with respect to a central plane of either the first or second portion 50, 54 of the spray unit 40. Therefore, Tilton neither discloses nor suggests a plurality of apertures as recited in independent claim 35, and thus

necessarily neither discloses nor suggests spraying cooling fluid through a plurality of apertures as recited in independent claim 35.

Accordingly, it is respectfully submitted that independent claims 1, 21, 32 and 35 are allowable over the applied combination, and thus the rejection of independent claims 1, 21, 32 and 35 under 35 U.S.C. §103(a) over Yamashita in view of Tilton should be withdrawn. Dependent claims 2, 5-13, 18-20, 22, 24-31 and 33-34 are allowable at least for the reasons set forth above with respect to independent claims 1, 21 and 32, from which they respectively depend, as well as for their added features.

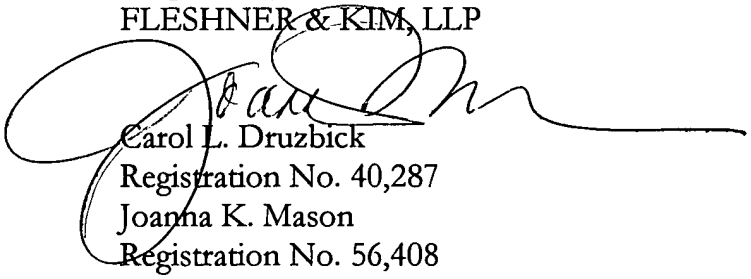
CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned, **JOANNA K. MASON**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this,

concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



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